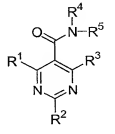
CLAIMS

We claim:

1. A method for the treatment of disorders responsive to opening of the KCNQ potassium channels in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of Formula I



I

wherein

R^1 is selected from hydrogen, halogen, C_{1-8}alkyl, phenyl, phenylalkyl, C_{3-6}heterocyclic, C_{3-6}heterocyclicmethyl, -CN, -OR, -NRR, -NRNCOR or $-CF_3$;

R^2 is selected from halogen, C_{1-8}alkyl, C_{3-7}cycloalkyl, phenyl, phenylalkyl, C_{3-6}heterocyclic, C_{3-6}heterocyclicmethyl, -CN, -OR, -NRR, -NRNCOR or -S-R;

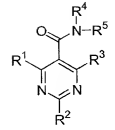
R^3 is selected from hydrogen, halogen or C_{1-8}alkyl;

R^4 is selected from hydrogen, $-CH_3$ or $-CH_2C_6H_5$;

R^5 is selected from hydrogen, C_{1-8}alkyl, C_{3-7}cycloalkyl, phenyl, phenylalkyl, C_{3-6}heterocyclic or C_{3-6}heterocyclicmethyl;

wherein each occurrence of R is independently selected from the group consisting of C_{1-8}alkyl, C_{3-7}alkynyl, phenyl, phenylalkyl, C_{3-6}heterocyclic and C_{3-6}heterocyclicmethyl.

2. The method of claim 1 wherein the compound of Formula I is selected from a compound having the structure



wherein

R^1 is hydrogen;

R^2 is selected from the group consisting of NR^6R^7, SR^8, OR^9, phenyl, and thienyl; in which said phenyl is optionally substituted with one or two C_{1-3}alkoxy groups;

R^3 is selected from the group consisting of C_{1-6}alkyl, trifluoromethyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkylmethyl, phenyl, amino, di(C_{1-3}alkyl)amino and pyrrolidinyl; in which said phenyl is optionally substituted with a halogen;

R^4 is selected from the group consisting of phenylmethyl, furanylmethyl, and C_{3-7}cycloalkylmethyl; in which the phenyl of said phenylmethyl is optionally substituted with one substituent selected from the group consisting of halogen, C_{1-3}alkyl, di(C_{1-3}alkyl)amino, trifluoromethyl, trifluoromethoxy, and trifluoromethylthio; and in which the furanyl of said furanylmethyl is optionally substituted with a C_{1-3}alkyl group;

R^5 is hydrogen;

R^6 and R^7 are each independently selected from the group consisting of hydrogen, C_{1-6}alkyl, C_{3-7}cycloalkyl, C_{3-7}alkynyl, phenyl, and phenylmethyl; in which said C_{1-6}alkyl is optionally substituted with a hydroxy group and in which said phenyl is optionally substituted with one or two substituents selected from the group consisting of halogen, trifluoromethoxy, and nitro; or R^6 and R^7 taken together with the nitrogen to which they are attached form a heterocyclic ring selected from the group consisting of pyrrolidinyl, morpholinyl, piperidinyl, homopiperidinyl, methylpiperidinyl, and 1,2,3,4-tetrahydoisoquinolinyl;

R^8 is selected from the group consisting of C_{1-6}alkyl, C_{3-7}cycloalkyl, phenyl, phenylmethyl, furanylmethyl, and thienyl; in which said phenyl is optionally substituted with one halogen or nitro group; and wherein the phenyl of said phenylmethyl is optionally substituted with one halogen or C_{1-3}alkyl group; and

R^9 is selected from the group consisting of C_{3-7}alkynyl, phenyl, 1-(4-fluorophenyl)ethyl, and thienylmethyl; in which said phenyl is optionally substituted with a halogen or C_{1-3}alkoxy group.

3. The method of claim 1 wherein said disorder is migraine or migraine-like attack.

4. The method of claim 2 wherein said disorder is migraine or migraine-like attack.

5. A pharmaceutical composition for the treatment of disorders responsive to opening of KCNQ potassium channels comprising a therapeutically effective amount of the compound of claim 1 in association with a pharmaceutically acceptable carrier, adjuvant or diluent.

6. A pharmaceutical composition for the treatment of disorders responsive to opening of KCNQ potassium channels comprising a therapeutically effective amount of the compound of claim 2 in association with a pharmaceutically acceptable carrier, adjuvant or diluent.